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SUBJECT: UKRAINE: DIVERSIFYING THE NUCLEAR POWER SECTOR

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- 11. (SBU) Summary: Ukraine's energy dependence on Russia is not limited to gas. Russia provides 100% of Ukraine's nuclear fuel and stores 60% of its spent fuel, while Ukraine's nuclear sector generates approximately half of the country's electricity. U.S. Department of Energy (DoE) assistance totaling \$380 million has helped Ukraine boost the operational capacity of its reactors by ten percent, significantly improve safety, reduce reportable events, and develop the ability to diversify its nuclear fuel supply.
- 12. (SBU) American firms Westinghouse and Holtec have projects in progress that would diversify Ukraine's nuclear fuel supply and store spent fuel domestically, although both have found their work stymied by Ukraine's difficult regulatory environment and GOU hesitation. Nonetheless, we are seeing limited progress. Ukraine recently announced that it would hold a tender for the construction of a nuclear fuel assembly plant and the Cabinet of Ministers has approved key legislation needed for Holtec's central spent fuel storage project. The GOU's actions in the nuclear sector, however, seem to be limited by an attempt not to provoke Russia, which is trying to maintain its dominance in the nuclear sector. End summary.

Nuclear Fuel Qualification Project

- 13. (SBU) Since 1998, DoE has worked with Ukraine to develop capacity in Ukraine to diversify its supply of nuclear fuel. Through the Ukraine Nuclear Fuel Qualification Project (UNFQP), DoE has provided Ukraine with technology transfer, fuel monitoring systems, and training for Ukraine's leading nuclear experts. DoE support also led to the creation of the Center for Reactor Core Design at the Kharkiv Institute of Physics and Technology.
- 14. (SBU) The UNFQP works with Westinghouse to develop an alternative supply of nuclear fuel for Ukraine. Six Westinghouse nuclear fuel assemblies (lead test assemblies) were installed in the South Ukraine Nuclear Power Plant (NPP) in 2005 and are now nearing the end of the qualification process. As a result of this positive testing, Westinghouse was able to sign a contract with the GOU in March 2008 allowing it to supply nuclear fuel to the three units at South Ukraine NPP. Westinghouse has already delivered 42 fuel assemblies, which are to be loaded into one of the three units at the South Ukraine NPP in the first quarter of 2010. The successful licensing and loading of this "reload batch"

of fuel assemblies would mark a major milestone for the UNFQP.

15. (SBU) Despite positive early developments, personality conflicts between the State Nuclear Regulatory Commission of Ukraine (SNRCU), the Center for Reactor Core Design, and Ukraine's state-owned nuclear company Energoatom, have caused delays in licensing the reload batch of Westinghouse fuel assemblies. These delays are threatening the success of the Nuclear Fuel Qualification Project and the commercial viability of Westinghouse to provide an alternative nuclear fuel supply (Ref A).

Nuclear Fuel Assembly Plant

- 16. (SBU) In response to a GOU request, in October 2008 Westinghouse offered to cooperate in the area of technology transfer and construction of a nuclear fuel assembly plant in Ukraine. Westinghouse's offer does not provide Ukraine with all of the components to establish a complete domestic nuclear fuel cycle. It does address, however, critical energy security issues in an economical and feasible manner. Russia's TVEL has also proposed to build a fuel assembly plant in Ukraine. Some GOU officials view TVEL's proposal favorably because it includes more manufacturing of fuel assembly inputs in Ukraine than Westinghouse's proposal.
- ¶7. (SBU) Prime Minister Tymoshenko and other GOU officials have been reluctant to award Westinghouse with a contract for the fuel assembly plant. In a July 9 meeting with Westinghouse and Holtec representatives, PM Tymoshenko explained that Ukraine could not sign an agreement with Westinghouse on the construction of the facility at this time because Russia could leverage Ukraine's dependence on Russian nuclear fuel supplies or gas to retaliate. In an apparently

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leaked memo from Russia's Rosatom that was published in the Ukrainian weekly "Dzerkala Tyzhnya" (Ref B), the company outlined proposed action steps to lock up the Ukrainian nuclear power market, while forcing Westinghouse out of Ukraine. The document contains both political and commercial measures that could be taken by Russia to secure Ukrainian agreement on long-term nuclear fuel contracts with Russia and prevent the construction of a Westinghouse fuel assembly plant. The strategy paper states that PM Tymoshenko should be told that Ukraine is responsible for delays in signing the contracts and that further delays could result in long-term nuclear fuel supply stoppages in 2011.

18. (SBU) In what looks like a marginally positive step that could, in theory, improve the transparency of the decision making process, Ukraine announced on October 6 that it would conduct a tender to award the contract for the nuclear fuel assembly plant. The tender had a very short deadline to submit bids and was vague in the criteria for a successful bid. Deputy Minister of Fuel and Energy Sergiy Pavlusha told us on October 20 that a working group had been formed to evaluate bids and that the National Security and Defense Council (NSDC) was currently reviewing the tender. It is unclear when a final decision on the tender will be made.

Central Spent Nuclear Fuel Storage Facility

19. (SBU) Currently, Ukraine pays approximately \$100 million per year for Russia to temporarily store and reprocess spent fuel from nine of Ukraine's 15 reactors. In 2012 Russia will begin returning Ukraine's spent fuel and waste, per the terms of the storage agreement, to Ukrainian territory. If Russia stopped taking Ukraine's spent fuel, Ukraine would run out of the limited storage space it has at its nuclear plants within three to five years, forcing it to reduce nuclear power generation. Therefore, it is vital for Ukraine's long-term energy security for it to develop spent fuel storage capacity.

- 110. (SBU) To meet Ukraine's needs for storing spent fuel, New Jersey-based Holtec International signed a contract with the GoU in 2005 to build a central spent nuclear fuel storage facility. The 150 million euro facility would store fuel from nine reactors. Holtec has offered to provide 90% of its own financing to commission the facility. Since signing the contract, Holtec's work has been limited by various Ukrainian regulations. Following the July 9 meeting with PM Tymoshenko, however, the Cabinet of Ministers did act to approve draft legislation that would give final approval to the design and construction of the facility; the legislation has been forwarded to Ukraine's parliament for its approval.
- 111. (SBU) Comment: Although it is in Ukraine's interests to cooperate with the U.S. in the areas of nuclear fuel supply and storage of waste, Russia's dominance is making it difficult for our cooperative efforts to move forward. It is possible that some of the bureaucratic delays that have hindered progress on Westinghouse's and Holtec's projects are the results of Russian influence in the process. Ukraine's nuclear sector dependence on Russia is only part of the larger Russian energy dependence equation. Russia will continue to use its leverage in other energy sectors, namely gas, in its effort to maintain its grip on this key segment of Ukraine's economy. End comment.